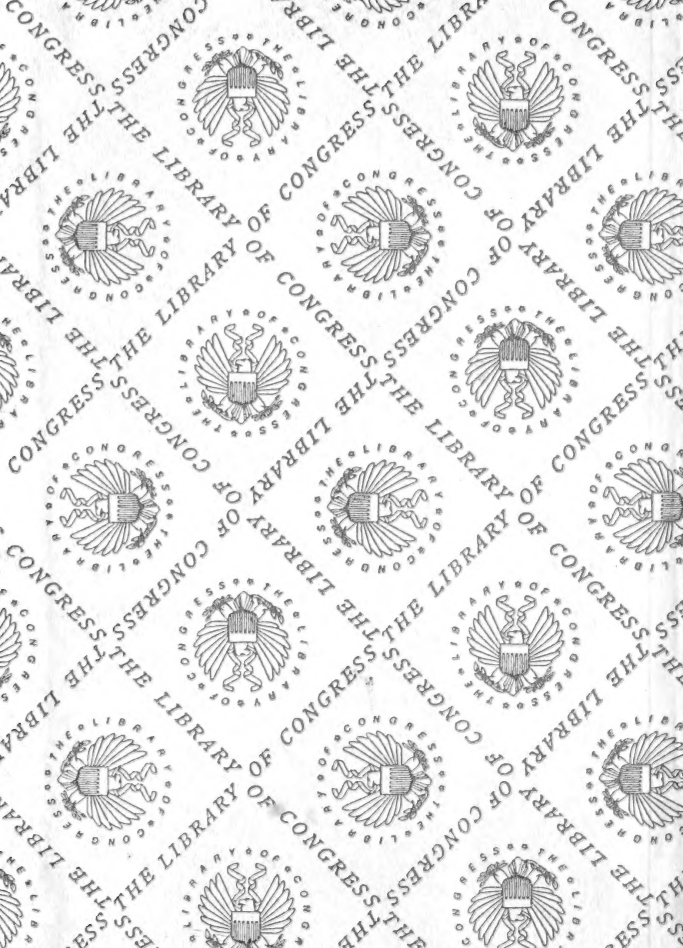
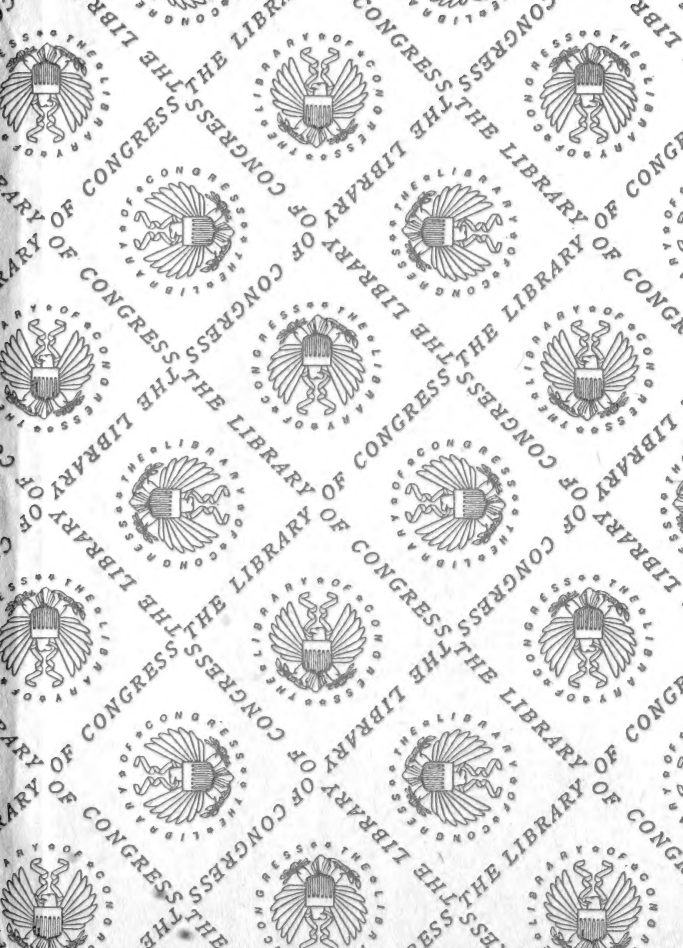


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THE GREATEST OF GRAINS

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# RICE.

HINTS AS TO ITS CULTURE.

ALSO, A BRIEF ACCOUNT OF ITS EARLIER HISTORY,  
TOGETHER WITH FACTS AND FIGURES REGARD-  
ING THE CEREAL AT THE PRESENT  
TIME IN CHINA, JAPAN AND  
THE UNITED STATES.

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
DAN TALMAGE'S SONS, WASHINGTON.

NEW YORK, CHARLESTON, NEW ORLEANS.

1892.

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## PREFACE.

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AT the meeting of the Cotton Grower's Association held in Memphis, Jan. 15th, 1892, a recommendation was adopted, advising the planters to reduce the acreage of cotton planting twenty per cent.

We then made the following suggestion : "Wherever the culture of cotton is curtailed we suggest the growth of rice. It is adapted to either lowland or upland; as an all-around crop, is among the safest and most profitable of Southern crops; gross results, \$40 to \$75 per acre; cost of cultivation, \$20 to \$35; difference in outcome due to character of cultivation or season. The consumption of rice in this country is increasing annually per capita and at far greater ratio than production. The United States to-day needs twice its present production to meet its home demand, and were the product increased even ten-fold the surplus could be marketed abroad at prices which would leave handsome margin to planter."

This has been widely circulated through newspapers in the South and has met with hearty com-

mendation from many of them, as well as from the commercial press elsewhere, who appreciate the importance of the crisis now impending in cotton circles.

We quote from the New Orleans *Picayune*, Jan. 18th, 1892: "Both sugar and rice have paid the producers well, and this will undoubtedly assist in offsetting the ill effects of the low price of cotton, as far as this State is concerned."

Charleston *News and Courier*, Jan. 27th, says: "The suggestion is a good one, we think; it is well sustained by the arguments of the gentlemen who offer it. \* \* There is probably no reason why the crop should not be grown on the uplands in a large part, if not every part, of South Carolina. We have seen it growing finely on the side of a mountain in this State. \* \* The experiment is well worth trying."

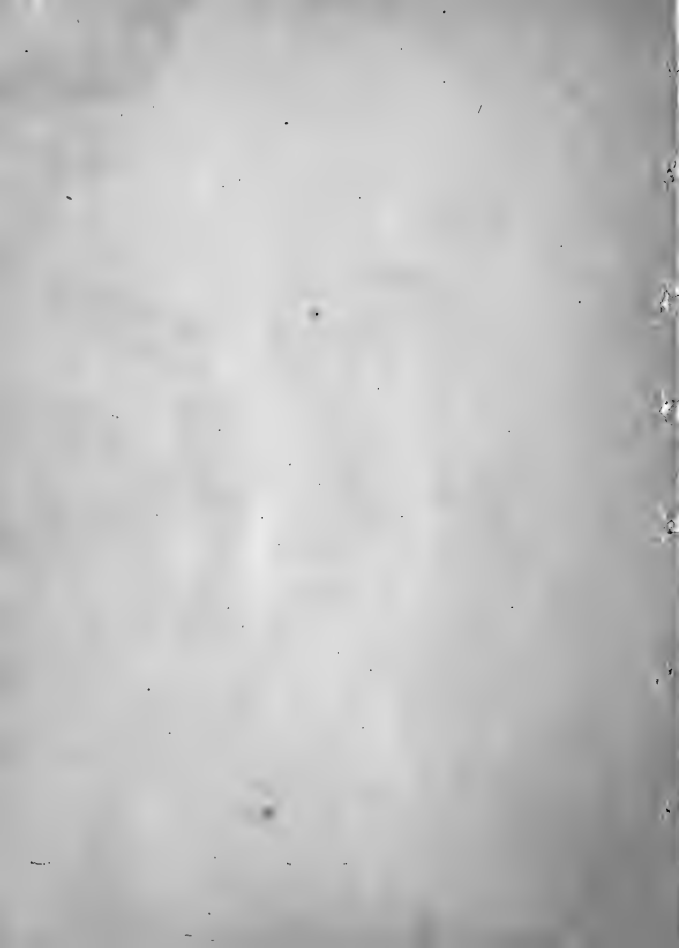
There is no reason why the United States should not speedily produce the largest crop, as it now does—"the best rice in the world." Every condition is most favorable, for while not native, it has here shown its finest development. This was true of its main crop before the war, and the magnificent quality grown by many planters to-day shows that it is not a lost art, though by no means so general. The high standard previously established is within reach of the humblest grower. It was due to a

generous rivalry among Carolina planters who sought the best seed and methods of cultivation. At the front in its day and of historic fame was Ward's "long grain Carolina" rice. The grain was like the largest Honduras head, but of crystalline character, and properly described "an elongated pearl." Mr. Ward made it a practice to gather of the heaviest and best filled heads in the field and in the course of a few years had seed unequaled in the world. We relate this in the hope that it may provoke others to good works. It paid doubly—making him a prince among planters, as well as yielding rich returns for the purse. It costs little or no more to cultivate the best, but the outcome is ever so many per cent. larger.

Respectfully,

DAN TALMAGE'S SONS.

NEW YORK, February 5th, 1892.



## HISTORICAL AND COMMERCIAL.

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The earliest record of rice in history is its introduction into China, several centuries before the deluge, in the year B. C. 2822. Where it came from, or how the record itself was preserved, is not stated. Rice was described by Theophrastus, B. C. 322, Pliny the Elder, B. C. 72, and by Dioscorides, B. C. 54. The claim made by the Chinese, coming to us from the mists which surround the ancient history of the race, serves to show the early date in the age of the world when rice was an esteemed article of food for mankind.

To insure improvement in character and productiveness, its culture in China was encouraged by royal favor, and imperial edicts were issued in regard to the selection of seed. Its value as food caused a widely extended culture, and to-day we find it used by the whole world, and by far the larger proportion of the world's population live on it almost exclusively. In China, Japan, the East Indies and islands adjacent the success or failure of the rice crop means plenty or famine to nearly 800,000,000 of people.

The quantity grown in these countries is enormous, amounting in a single year to two hundred and fifty billions (250,000,000,000) of pounds, or about fifteen hundred (1,500) times as much as has been raised up to the present time in our best seasons. This immense quantity is mainly consumed in the countries where it is grown. Large amounts are exported to Europe, North and South America, yet so great is the product, these exports do not reach one per cent. of the total. Looking at the map of the world, Japan seems insignificant, yet in 1870 this apparently small territory had 8,000,000 acres planted in rice, producing an average of fifty bushels to the acre, equal to 9,600,000,000 pounds. The government assessment was on about half this amount. Japan exported in 1891 about one hundred and seventy-five million (175,000,000) pounds, nearly four times as much as the total product of the United States the same year. The crop of 1889-90 was 11,700,000,000 pounds. The exports from India, principally Burmah, in 1891 were over two billion (2,000,000,000) pounds. From these figures we can gain somewhat of an idea of the enormous production of rice and the important place it occupies in the food products of the world.

#### THE CULTURE IN CHINA.

Although cultivation in many portions of the

East is crude, varying little from that pursued a thousand years ago, it may be interesting to relate a few particulars in regard to the culture in China. In the southern districts the land is flooded before plowing and harrowing, the buffalo or water-ox being used in working the land, the desired result being a soft, plastic mixture of mud and water about six inches in depth. The seed in the meantime has been planted in small patches of highly enriched soil, and by the time the ground is prepared a vigorous growth is started, and they are transplanted in rows about twelve inches apart each way. From ten to twelve plants are put in each place, the laborer simply pressing the roots into the soft soil, and as his hand is withdrawn, the mud and water fill in around the roots, and the planting is finished.

During the growing season care is taken to keep a sufficient quantity of water to flood the rice until the crop is nearly ripe. This is done by water-wheels worked by hand, foot or animal power. These appliances for elevating water are crude in construction, yet effective on account of the cheapness of labor. The first crop is cut in the latter part of June or early in July, and as soon as gathered a second planting is made by preparing ground and seedlings as before. This second crop is harvested in November. In some sections the

ground is made to produce a third crop, some quick-growing vegetable being planted. To counteract this drain upon the productiveness of the soil fertilizers are freely used, and in this line of agriculture the Chinese, as well as the Japanese, are far advanced. Instances of such constant planting and reaping make it readily understood how the immense population of these countries are fed without importing any considerable quantity of breadstuffs.

In the latitude of Wuthang, 30 degrees north, the culture is mainly upland or "dry culture," and the shorter season will not allow a second seeding after the first is harvested. They secure two crops, however, by planting between the rows of the first (which is seeded in May), eighteen to twenty days after. The growth of this second planting is retarded by the shade and superior vitality of the first, which reaches maturity in August and is then harvested. The second planting at this time is only about a foot high. The ground is loosened around the roots, fertilizers are applied and having nothing to retard its growth, rapidly matures and is harvested in November. The reaping hook is similar to our sickle.

The use of Rice is by no means confined to feeding vast masses of humanity ; preparations from it are often prescribed by physicians as being peculiarly adapted to cases where cooling and at the same



time nutritious food is necessary. It enters into manufactures, such as jewelry, works of art, toys, cement, paper, arrack (an intoxicating liquor), also a light beer is made from it ; it is offered by the heathen in worship to their idols, and it was recently the standard of value in Japan ; indeed, its uses are so varied that it ceases to be a matter of wonder that it should be so highly prized in the countries where it is most largely produced.

In the foregoing we have only touched upon a few points of interest as concerns the production and value of this cereal in the Old World.

#### CULTURE IN THE UNITED STATES.

Turning attention nearer home we find many points of interest in its culture in this country. We shall not deal with such tremendous figures of production, yet the industry is an important one to the United States, and particularly to the South. In 1694 a vessel bound for Liverpool from Madagascar, was blown out of her course and put into the port of Charleston, S. C., for repairs. Before starting on his homeward voyage, the captain gave to one of his friends, Landgrave Thomas Smith, who was at the time Governor of the Colony, a small parcel of rough Rice, which was in his cook's stores, suggesting it might possibly grow and afford

them an additional article of food. In a new country such a gift was valuable. That it was so, subsequent events proved, for the seed was planted in Mr. Smith's garden (now known as Longitude lane, in the city of Charleston), and the product carefully preserved and distributed among the colonists, until from this small beginning was developed our Carolina Rice, known the world over for its superior style and character. The culture was necessarily limited at first, but as the planters learned its peculiar needs, the products increased and during the ten years—1720 to 1729 inclusive—the exports were 44,081 tons. During the next decade, 1730 to 1739, 99,905 tons were exported to Europe (Holland, Bremen and Hamburg taking over three-quarters of this amount). Thirty years after over 24,000 tons were exported in a single year (Great Britain taking about 12,000 tons). The next fifty years found the culture extended into both Carolinas and Georgia, and the product for the three States in 1816 was 41,851 tons, equal to 137,843 tierces of 600 pounds. The product increased, of course varying with the favorableness of the season.

#### PRODUCTION FROM 1720 TO 1889.

Previous to 1860 no record of Louisiana crop was kept.

Decades.	Pounds.	Average per year.
1720 to 1729 . . . . .	98,741,440	9,874,144
1730 to 1739 . . . . .	223,787,200	22,378,720
1740 to 1749 . . . . .	272,235,000	27,223,500
1750 to 1759 . . . . .	235,785,000	23,578,500
1760 to 1769 . . . . .	334,349,000	33,434,900
1770 to 1774 * (4 years) . . .	259,377,000	64,844,250
1782 to 1784 * (2 years) . . .	41,041,500	20,520,750
1790 to 1799 . . . . .	635,545,600	63,554,560
1800 to 1809 . . . . .	502,950,600	50,295,060
1810 to 1819 . . . . .	582,778,200	58,277,820
1820 to 1829 . . . . .	716,536,800	71,653,680
1830 to 1839 . . . . .	890,287,800	89,028,780
1840 to 1849 . . . . .	997,071,600	99,707,160
1850 to 1859 . . . . .	1,023,225,000	102,322,500
1860 to 1869 . . . . .	316,398,000	31,639,800
1870 to 1879 . . . . .	700,867,800	70,086,780
1880 to 1889 . . . . .	1,223,794,370	122,379,437

\* From 1775 to 1782 (during Revolutionary War) and from 1784 to 1789 no record can be found.

From 1862 to 1864 no record was kept, the production being doubtless small, and in 1865 but little was done except in way of restoring plantations neglected during the war.

Up to 1820 the principal, in fact, only large market was in Europe and the West Indies, but our facilities for cleaning being greatly improved, and as the United States increased in population the home consumption became an item of prime interest. New York was the main point for distri-

bution, and Rice was largely used as a medium of exchange between the North and South, hence it found its way into the hands of dealers in dry goods, boots and shoes, machinery, etc., and they jobbing out of the grocery line, the prices obtained were very low. The purchases made by planters were made on long time and on long profit, thus receiving low prices for what they had to sell and paying high prices for what they bought. This cutting on both sides of the planter's interest lasted until 1841, when Mr. Dan Talmage, of New York, seeing the evil and knowing its remedy, and wisely foreseeing the future, took up Rice as a specialty, concentrated the receipts, and, handling it with great discrimination, took it out of the line of barter and made it a cash article, thereby enhancing its value as a staple product.

New York still retains its place as a large milling and distributing centre, but through added and direct transportation facilities since the war fully three-fourths of the crop is now shipped from New Orleans, Charleston and Savannah to the North and West. The cities noted are placed in the order of their business importance.

Very little of our domestic production is now exported to foreign countries, but previous to 1860 the export trade was an important feature in the disposition of the product.

## EXPORTS FROM 1849 TO 1860 INCLUSIVE.

Years.	Pounds.	Years.	Pounds.
1849.....	47,988,000	1855.....	15,576,000
1850.....	38,658,000	1856.....	18,549,600
1851.....	36,626,400	1857.....	18,762,000
1852.....	39,151,800	1858.....	18,483,200
1853.....	23,248,800	1859.....	21,694,800
1854.....	27,766,800	1860.....	26,012,400

Prices in New York for a series of years before the war—date selected is January 1—as being the lowest average for the year :

	Common to Fair.	Good to Prime.
1855.....	3 @ $3\frac{1}{2}$	4 @ $4\frac{1}{2}$
1856.....	$4\frac{1}{4}$ @ $4\frac{1}{2}$	5 @ $5\frac{1}{8}$
1857.....	$3\frac{1}{4}$ @ $3\frac{5}{8}$	4 @ $4\frac{3}{8}$
1858.....	$2\frac{1}{2}$ @ $2\frac{3}{4}$	3 @ $3\frac{1}{2}$
1859.....	$2\frac{3}{8}$ @ $2\frac{7}{8}$	$3\frac{1}{4}$ @ $3\frac{3}{4}$
1860.....	3 @ $3\frac{3}{8}$	$3\frac{3}{4}$ @ $4\frac{1}{4}$
1861.....	$2\frac{3}{4}$ @ 3	$3\frac{1}{2}$ @ $3\frac{7}{8}$

	Common to Prime.
April, 1861.....	$3\frac{3}{8}$ @ $4\frac{1}{4}$
July, 1861.....	$5\frac{1}{8}$ @ $6\frac{1}{4}$
October, 1861.....	$7\frac{1}{4}$ @ 8

The effect of the commercial depression of 1857 is noticeable in the low prices obtained until Carolina ceased to arrive and war prices prevailed.

## THE TARIFF PROTECTION.

Prior to the war, no foreign rice was imported and the tariff was but nominal, varying from fifteen to twenty per cent. ad valorem, which on the then current prices was one-half to three-quarters cent per pound. During the war the tariff was advanced from time to time, reaching its highest, two and one-half cents per pound on cleaned, in 1864, and continued at that until 1883—except that received from the Hawaiian Islands, which since 1876 has been admitted free of duty under the reciprocity treaty promulgated that year. Since then the duty on Cleaned Rice has been reduced: In 1883 to two and one-quarter cents, and in 1890 to two cents per pound. The last Tariff bill, Oct. 1st, 1890, places duty on imports of Foreign Rice per pound as follows: Cleaned, 2 cents; Uncleaned,  $1\frac{1}{4}$ ; Paddy or Rough,  $\frac{3}{4}$ ; Rice Flour,  $\frac{1}{4}$ ; Rice Meal,  $\frac{1}{4}$ ; Broken Rice,  $\frac{1}{4}$ .

Though the primary design of the greatly enlarged tariff was for the purposes of revenue during the war period, it was retained that through the incidental protection derived therefrom the planters might the more speedily rehabilitate the plantations and bring up the culture to its former value as an industry. That the incentive has been appreciated is proven by the table next following; the culture

had gotten fairly underway by 1870 and in the first decade had doubled and at the end of the second trebled.

# PRODUCTION FOR WHOLE OF THE UNITED STATES.

Pounds.	Pounds.
1870-71. .... 52,892,400	1881-82.....104,766,555
1871-72.....40,339,000	1882-83 .....100,500,000
1872-73.....51,113,750	1883-84.....110,700,000
1873-74.....59,936,400	1884-85.....109,561,600
1874-75.....65,215,000	1885-86.....150,500,000
1875-76.....82,710,800	1886-87.....155,669,500
1876-77.....86,630,000	1887-88.....113,630,700
1877-78.....77,730,400	1888-89.....124,733,200
1878-79.....81,461,800	1889-90.....131,722,000
1879-80.....86,968,000	1890-91.....136,750,000
1880-81.....122,010,715	1891-92*.....146,500,000

\*Estimated.

Comparing these figures with those showing yearly average, 1820 to 1859, it will be seen that we have reached, in fact exceeded, the highest average of those years. At that time we exported largely to foreign markets, but with increase of population and greatly increased and cheapened transportation facilities, our whole product has found a market in our own country, and in addition thereto from 200,000 to 250,000 packages of foreign styles are imported annually to meet the growing demand.

The population is increasing and the consumption per capita also, in a greater ratio than the production, hence there is room for a large increase of native product without endangering the values thereof.

The industry in Louisiana has done much to restore the old-time production, having increased from 2,746,890 pounds in 1865 to 87,750,000 pounds in 1891 ; while this shows a wonderful increase in this State, the Carolinas and Georgia are still far behind the amount produced prior to 1861.

#### POSSIBILITIES OF CULTURE.

It is estimated that in eight Southern States there are from 70,000,000 to 90,000,000 of acres suitable for Rice culture and otherwise of little value, called waste lands. Louisiana contains more acreage of lands particularly suitable for cultivation of Rice than any other State. At a low average of yield in a fair season, say 1,000 pounds clean Rice per acre, if these waste lands were brought under tillage, the United States could rival the East and produce from 70,000,000,000 to 90,000,000,000 of pounds yearly.



## AGRICULTURAL.

## HINTS AS TO CULTURE.

As abroad, so in the United States, the culture of rice is both lowland (wet) and upland (dry). The main crop is lowland—that is, upon lands which are so situated as to be overflowed or drained at the will of the planter, according to the season of the year and condition of the crop. It was probably, adopted first, as rice was and is still by many regarded as strictly a water plant; second, large tracts of land, mainly worthless, were thereby brought into use; third, although expensive, has been adhered to, as the yield thereon is very heavy and net results under favorable conditions most remunerative.

Cultivation on uplands has not been so general, owing in part to reasons above given and ignorance of the fact that rice yields far beyond other grains. At one time the quantity was insignificant, so small that no notice was taken of it, but it is receiving enlarging attention of late, and any estimates

of the rice crop of the United States which ignore it are certain to be wide of the mark. The phrase "good as wheat" is scarcely half descriptive of the rewards which come to the careful planter on uplands in average seasons. We have heard of remarkable yields on lands that seemingly offered little inducement for cultivation, many times the value being taken off in a single crop. The general character of upland Rice is very handsome, being flinty and susceptible of high polish.

#### LOWLAND CULTURE.

Level lands, which can be easily and successfully irrigated and drained are the best, such as swamp lands, near river bottoms, or inland swamps. The latter do not produce quite as much as those on rivers, as the water cannot be so easily controlled, but the product is usually of fine quality, quite the equal of that grown under more favorable conditions.

For convenience in irrigation the land is laid off in "squares" say 100 by 150 feet (by embankments) eighteen (18) to twenty-four (24) inches high, according to lay of the land. All of the land may not be on the same level and these embankments serve to hold the water when needed, hence they are called "check-banks." Flood-gates

or flumes, with cut-offs at both ends, are placed in connection with the river or reservoir from which the water is procured, and the lands flooded. Main ditches are constructed so as to hold water during growing season and for the purposes of drainage when needed. The very greatest of care should be taken to clean the land from grasses and foul seeds. Having prepared the "check-banks," constructed ditches and flumes—so as to be able to flood and drain the land at will—the next step is ploughing, which should be done as early as possible, particularly on new land. Plough from four to five inches deep the first year; subsequent years deeper ploughing may be beneficial. A few days before planting harrow the ground thoroughly. This is very important, as the soil should be well pulverized, and at the same time grass and weeds will be killed thereby.

#### PLANTING.

Rice may be planted as early as February or as late as second week of July, according to location. There are many varieties of seed. We mention Honduras seed, a large, bold grain, very productive—if season is good and harvest favorable, commands good price in market; White Seed Carolina—a white, flinty grain. This is the kind which has

given Carolina Rice a world-wide reputation. Gold Seed Carolina—a large plump grain, heavy yielder, but apt to shatter and deteriorate. The best seed, all things considered, is without doubt the White Seed Carolina. It is hardy, standing the vicissitudes of unfavorable seasons better than the Honduras or Gold Seed, and is a standard grade in the market.

After thorough harrowing, the seed may be sown broadcast—or in drills about a foot apart—latter preferable, as it can be weeded easier. Quantity per acre is from eighty to one hundred pounds of seed. After covering lightly, the land is flooded just sufficient to cover it—until the seeds are sprouted; this is called the “point flow.” The water is then drawn off; when plants are six to eight inches high, the water is turned on again to kill the grass and weeds, and held four or five weeks or until the growth will shade the ground between the rows. This is called the “stretch flow.” The water must never be allowed to rise above the first “barrel” of the stalk. Lastly comes the “harvest flow,” which begins when the stalk is about eighteen inches high, and is kept on until the rice “heads.” About a week or ten days before harvest the water is drawn off, and when the upper half of the head is ripe harvest should proceed as expeditiously as possible, as every day of over-ripe-

ness reduces the value of the cleaned rice. In testing a sample of Rough Rice, the presence of a green grain here and there is a sign that it was cut at the proper time.

#### HARVESTING.

Harvesting is mainly done with the sickle, although machines are being offered which do most excellent work under favorable conditions. If the sickle is used, cut about two feet and a half from the top and lay the "hands" down on the stubble to dry. This allows circulation of air beneath and all around it. Twenty-four hours of good weather should cure it sufficiently for binding, which should never be done while the straw is damp. Cut in the morning and bind previous days, cutting in the afternoon. This divides the labor about right. Soon as dry, remove the bundles to the barn-yard and stack properly, so as not to suffer damage from storms. Let the bottom of stacks be raised from the ground a foot, so as to have circulation of air underneath. Rice should cure in the stack for thirty days before threshing. Run a stake from the side into the centre of the stack and examine it every day or two; by noticing the temperature of the stick you can ascertain if the curing process is going on properly. If the stake gets hot, the stack must be pulled down, straw aired and restacked.

When cured the grain is separated from the straw by flails or in large quantities by threshing machines, of which several very satisfactory ones are now in the market. Rice should be thoroughly fanned and screened, so as to be free from straw, sticks, foul seeds or any extraneous matter, the presence of which materially affects the value of the Rough Rice, as well as that of the Cleaned product.

*It will pay to have every bundle of Rice examined before it goes to the thresher, so as to pick out all weeds, grass and foul stuffs, the seeds of which when threshed with the Rice reduce its value far more than cost of labor of removing them at this point,*

#### MARKETING.

The Rice can be sold in the Rough, or if full value is wanted, send it to the largest milling centre practicable, with instructions to your agent to have it milled on toll and the cleaned proceeds sold for your account.

The following are milling centres and each have mills capable of doing the finest work: New Orleans, Charleston, Savannah, New York, Wilmington. They are placed in the order of their commercial importance in rice.

It is needless to suggest that these markets not

only offer better milling facilities, but by reason of being trade centres, the cleaned product is fully assured of ready sale at highest current prices.

In shipping, the Rough should be packed in strong double bags, about 170 to 180 pounds in each package. Sew the bag; do not tie it.

#### UPLAND OR DRY CULTURE.

This kind of Rice is grown without flooding; is planted in hills or rows wide enough apart to permit a horse cultivator to be worked, and while it does not produce as much per acre as that grown in the water, will yield in quantity beyond other grains and under equal conditions give an outcome of far higher monetary value. It should be properly fertilized, for it, like any other product, suffers from underfed or starved soil. If neglected in this particular it may prove less remunerative by breaking under the milling process. Dry culture allows more careful cultivation and removal of foul grasses and weeds. The general remarks as to Harvesting, Threshing and Marketing, given under head of Lowlands, will apply to the Uplands.

#### SIX POINTS REQUIRING CAREFUL ATTENTION.

- 1st.—Care in selecting or cleaning land.
- 2d.—Care in planting good seed.

3d.—Care in cultivation.

4th.—Care in harvesting, curing and threshing.

5th.—Care in sorting grades.

6th.—Care in having Rough properly milled.

*First.*—Clean your land before putting seed into it ; enough weeds will grow in spite of you, so *start* free.

*Second.*—Plant good seed—“ Like produces like.” It costs no more to plough, plant, cultivate, harvest, mill and sell good rice than poor, but the *money result* is vastly different.

*Third.*—Cultivate carefully. After you have spent time, labor and seed, don't grow weary in well-doing, but follow it up until the time you expect your reward.

*Fourth.*—Harvest at the right time, and don't linger if you have a good day. Let your rice cure before you thresh. “ Haste makes waste ” in this as other things. Thresh and clean your rice so it will give you a reputation worth ten cents a bushel more than your slouchy neighbor.

*Fifth.*—Sort your grades—that is, if you have a few bags of poor truck, don't put them in with your good rice. It will spoil it all, and, what's more, spoil your reputation. Better feed the trash to the chickens ; they will grow fat on it.

*Sixth.*—Get your rice milled where they will do



it the best ; not where they charge you the least. Good service in milling costs money, like anything else, and milling can be "too cheap to be good."

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The necessary limitation of this pamphlet will not allow us to enter into the minutia of cultivating. The variations of soil, climate, water-supply, irrigating facilities, will afford abundant opportunity for the careful, thrifty planter to study the needs of the plant, and reap his reward by intelligent adaptation of means to ends.



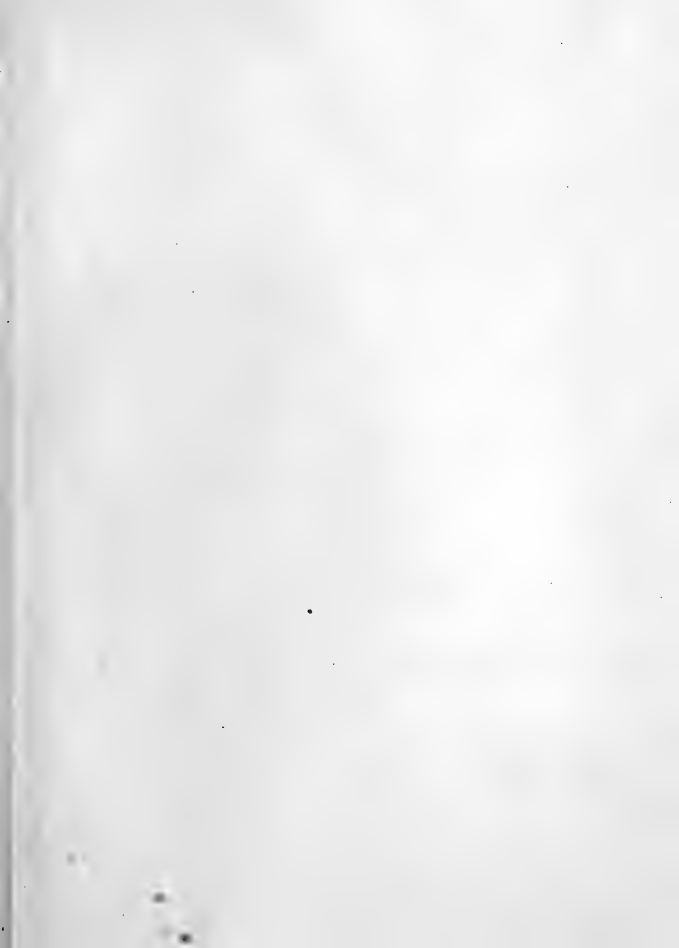


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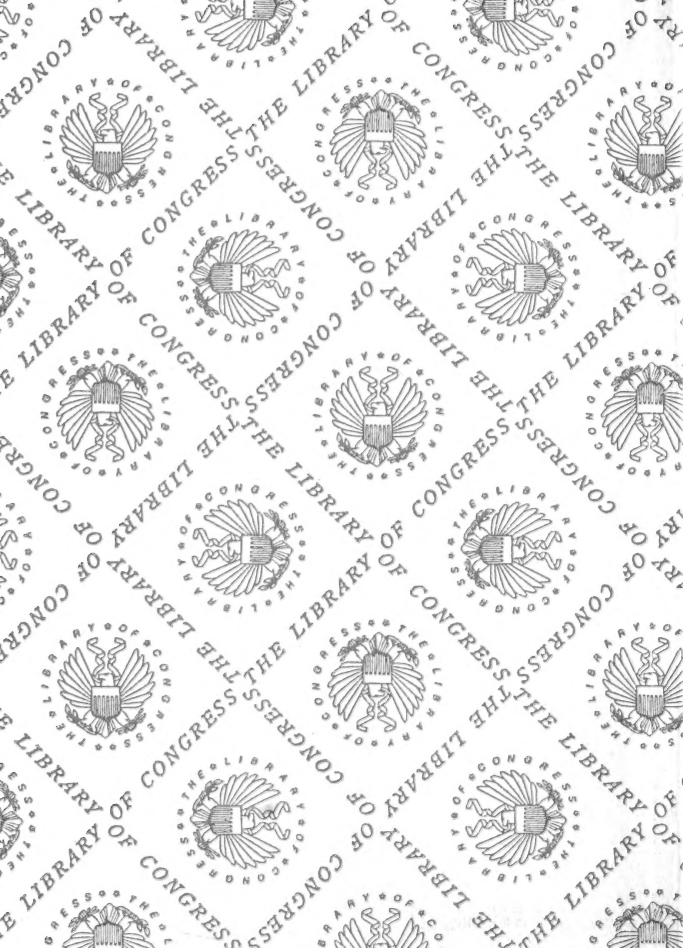
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